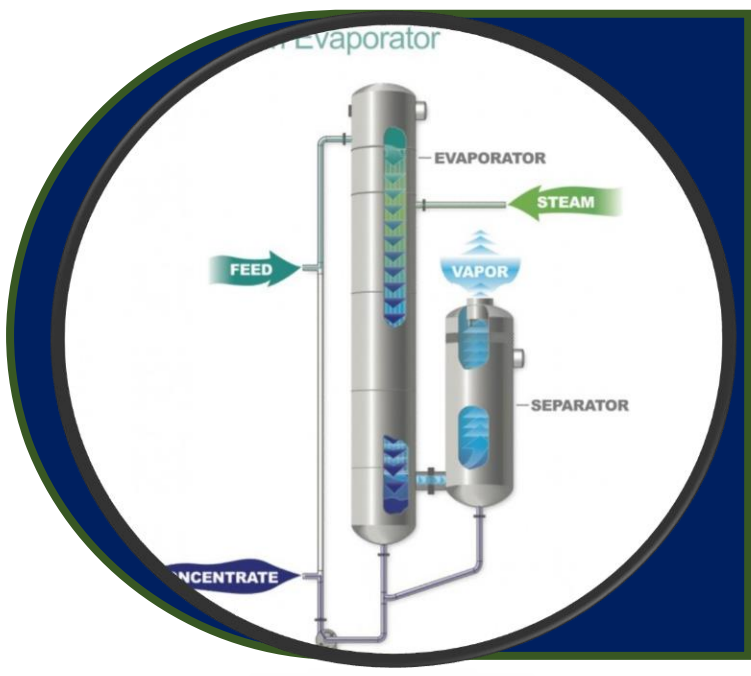
A wastewater evaporator is a device that removes water from liquid effluent by turning it into vapour and leaves pollutants behind. A wastewater evaporator's purpose is to minimize the volume of waste products and do wastewater recovery. Evaporation technology can be used to reclaim precious items or separate dangerous materials through wastewater flows. It can be used to concentrate or remove salts, other harmful elements, and heavy metals from a solution.

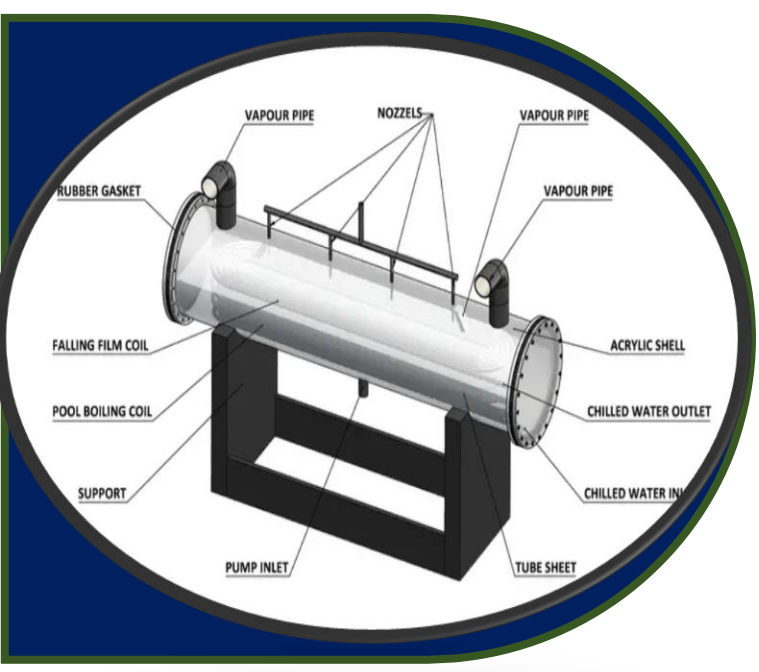
Categories of Evaporation

Evaporators have diversity of sizes and shapes. The parameters that are used to classify evaporators are following:

- The layout of the heat exchanger
- The technology utilized to transmit energy towards the solution.
  1. Vertical Tube Falling Film
  2. Horizontal Tube Spray Film
  3. Forced Circulation
  4. Hybrid and Combined Systems



Evaporator Techniques for Effluent Treatments



WORKING

Heat is transported from condensing steam toward a fluid at low temperature over a metallic heating surface, which drives the evaporation process. This leads in rise in the concentration of solutes.

Advantages Of Evaporator

- Production of high-grade distillate is among the most important advantages.
- It's always recyclable and can be used in industrial or temperature control applications.
- Chemical and power plant wastewaters
- Wasted pulp liquors.
- Metal finishing wastes
- High soluble BOD streams
- Emulsified oil streams
- Non-volatile aqueous organic or inorganic streams containing acids, bases and colors.

Application

1. Zero Liquid Discharge (ZLD)
2. Metal Finishing
3. Plate Evaporators
4. Mechanical Vapor Recompression
   - dairy industry
   - brewing industry
   - sugar industry
   - saline industry
   - pulp industry
   - chemical industry
   - alcohol industry
5. Long Tube Vertical Evaporators